BUTTERFLIES RECORDED FROM MURRAY ISLAND, TORRES STRAIT, QUEENSLAND

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Abstract

All records of butterflies from Murray Island, with collectors' names and collection dates are listed. Danis scaeffera Eschscholtz and an unidentified species of Nacaduba Moore are recorded from Australia for the first time. The New Guinea subspecies, Ocybadistes ardea ardea Bethune-Baker, Borbo impar tetragraphus Mabille, Graphium eurypylus lycaonides Rothschild, Tirumala hamata subnubila Talbot, Danis cyanea manto Grose-Smith and Kirby and Catochrysops panormus papuana Tite, are recognised in Australia for the first time. Cepora perimale latilimbata (Butler), Cupha prosope turneri (Butler), Deudorix epijarbas diovis Hewitson and Euploea alcothoe monilifera (Moore) are recorded for the first time from Murray Island. The occurrence of Troides priamus poseidon (Doubleday) on Murray Island is confirmed. Polymorphism of Hypolimnas antilope (Cramer) is noted, and taxonomic problems with the Jamides phaseli Mathew complex and the C. p. turneri and C. p. latilimbata subspecies groups are discussed.

Introduction

Until recently the butterfly fauna of the Torres Strait islands was poorly known, with most records coming from the collections of Hermann Elgner during the first decade of this century (Moulds 1977). These records were published by Waterhouse and Lyell (1914) and repeated in all subsequent publications.

Elgner collected on Murray (Mer) Island, the largest in a group of three volcanic islands lying on the Great Barrier Reef in the far east of the Torres Strait, in 1907 (Moulds 1977). No other collectors visited the island until after the construction of an airstrip in 1979 (Table 1). This paper summarises all collection records from Murray Island (Table 2) and includes discussion of new and significant records.

We have followed the taxonomic arrangement of Common and Waterhouse (1981), Smiles (1982), Hancock (1983) and Ackery and Vane-Wright (1984).

Despite the amount of collecting done on Murray Island during the last five years, the seasonality of the butterflies is still not well known as most of the collecting has occurred between March and July. Further collecting, particularly during the summer/wet season months, would make our knowledge of the butterfly fauna of the island more complete.

Discussion HESPERIIDAE

Ocybadistes ardea ardea Bethune-Baker

O. a. ardea was previously known from Aru Island and New Guinea to New Britain (Evans 1949). Specimens from Murray Island differ

Trip		Collector(s) Date
1.	H. Elgner	August, September 1907
2.	G.A. Wood (1987a)	April, May 1984/85
3.	N. Gough (QDPI)	May 1984
4.	I. Johnson	July 1985
5.	J.F. Donaldson and E. Hamacek (QDPI)	May, June 1985
6.	T.A. Lambkin (QDPI), A.I. Knight,	
	M. De Baar, K. Beattie	March, April 1986
7.	J.W. Turner (QDPI)	April 1986
8.	C.G. Miller	May 1986
9.	G.K. Waite (QDPI)	February 1987
10.	I. and A. Johnson	April 1989
11.	T.A. Lambkin (QDPI) and A.I. Knight	April 1989
12.	P. Allsopp (BSES)	November 1989
13.	J.F. Donaldson (QDPI)	March 1990

Table 1. Details of collecting trips to Murray (Mer) Island

QDPI Queensland Department of Primary Industries.

BSES Bureau of Sugar Experiment Stations

from mainland Australian specimens of O. a. heterobathra (Lower) in the colour of the underside hindwing, being consistently orange, and we have placed them into O. a. ardea. O. a. heterobathra from northern Queensland, typically have the hindwing beneath with a pronounced greenish tinge (Evans 1949); some northern Queensland examples have the hindwing beneath tending towards yellow but no specimen from Murray Island that we have seen has the greenish tinge characteristic of O. a. heterobathra. [Further problems exist with the taxonomy of this subspecies, with specimens from south eastern Queensland (Currumbin and Burpengary) (authors' collections) having the colour of the hindwing beneath brown instead of yellow-green.]

Borbo impar tetragraphus Mabille (Figs 1, 2, 5)

B. i. tetragraphus was previously known from the Moluccas to the Solomons (Evans 1949) and is recorded for the first time from Murray Island. Specimens from Murray Island (Figs 1, 2) have a distinct upper orange tone, and on the forewing the spot in space 2 is separated from the lower cell spot as in B. i. tetragraphus (Evans

Figs 1-10. $(1 \circ, 2 \circ)$, Borbo impar tetragraphus, Murray Island (Qld); $(3 \circ, 4 \circ)$, B. i. lavinia, Darwin (N.T.); $(5 \circ)$, B. i. tetragraphus, Moa Island (Qld); $(6 \circ)$, Euploea alcothoe monilifera, Murray Island (Qld); $(7 \circ)$, Tirumala hamata subnubila, Murray Island (Qld); $(8 \circ)$, T. h. hamata, Brisbane (Qld); $(9-10, \circ)$, Danis schaeffera, Murray Island (Qld), (9), recto, (10), verso. Forewing lengths - length of costal margin (mm): Fig. 1 (19), 2 (22), 3 (17), 4 (20), 5 (19), 6 (44), 7 (47), 8 (42), 9, 10 (20).











1949) and are distinct from *B. i. lavinia* Waterhouse from the Northern Territory (Figs 3, 4) (Miller collection), which are much paler in colour and have the spot in space 2 overlapped by the cell spot (Evans 1949).

Specimens of *B. i. tetragraphus* from Murray Island have noticeably smaller spots on both wings (particularly in females) than *B. i. lavinia* from the Northern Territory. We suggest that the record of this subspecies from Moa (Banks) Island by Waterhouse and Lyell (1914) (as *Parnara laraca* Swinhoe) and Common and Waterhouse (1981) is incorrect and should refer to *B. i. tetragraphus*. We have seen one male from Moa Island (Fig. 5) (Miller collection) and cannot distinguish it from males from Murray Island. This, together with Waterhouse and Lyell's description "female examples from Banks Island have the hyaline spots and dots smaller, especially those in the cell" is additional evidence that the Moa Island population is distinct from *B. i. lavinia* from the Northern Territory. Thus it may prove that *B. i. lavinia* is restricted to the Northern Territory and that *B. i. tetragraphus* is the subspecies in Torres Strait.

PAPILIONIDAE

Graphium eurypylus lycaonides Rothschild (Figs 21, 22)

G. e. lycaon (C. and R. Felder) (Fig. 22) is known from Murray Island (Waterhouse & Lyell 1914) and Cape York to Sydney (Common and Waterhouse 1981). Specimens collected on Murray Island since 1984 (Table 2) do not agree with G. e. lycaon but are G. e. lycaonides, which occurs from West Irian to Papua (D'Abrera 1971). Murray Island specimens (Fig. 21) are pale blue in colour, with a dark brown ground colour above and small submarginal spots. G. e. nyctimus (Waterhouse and Lyell) (authors' collections) from the Northern Territory is closer in appearance to G. e. lycaon from eastern Australia than to G. e. lycaonides from Murray Island.

Troides priamus poseidon (Doubleday)

Australian records of this subspecies are scanty (Haugum and Low 1979), with the only recent records for Torres Strait being from Moa, Yam (Monteith, Miller pers. comm.) and Darnley (Miller, Wood pers. comm.) Islands. Specimens collected in 1986 confirm its presence on Murray Island.

PIERIDAE

Cepora perimale latilimbata (Butler)

Cepora perimale scyllara (W.S. Macleay)

C. p. scyllara occurs on mainland Australia and in the southern and eastern region of the Torres Strait (Common and Waterhouse 1981).

C. p. latilimbata (Butler) ranges from New Guinea into Torres Strait with its distribution overlapping that of C. p. scyllara (Common and Waterhouse 1981). A large series of specimens collected by us on Murray Island indicate that specimens assignable to both subspecies with a total range of intermediates occur there, indicating that the status of the two subspecies needs to be reviewed.

NYMPHALIDAE

Tirumala hamata subnubila Talbot (Figs 7, 8)

Specimens of T. h. subnubila (Fig. 7) from Murray Island show consistent differences to mainland Australian specimens of T. h. hamata (W.S. Macleay) (Fig. 8). In Murray Island examples the blue spots and stripes are smaller and narrower than in examples from mainland Australia. Common and Waterhouse (1981) stated that the nominotypical subspecies occurs in New Guinea and Australia, but Talbot (in D'Abrera 1971) separated Papuan (New Guinean) examples from Australian, and placed them into a separate subspecies, T. h. subnubila. We consider the Murray Island population is consistently different from T. h. hamata and warrants placement in T. h. subnubila.

Euploea alcothoe monilifera (Moore) (Fig. 6)

This mainly New Guinean species has a limited distribution in Australia (Common and Waterhouse 1981) and (De Baar 1988). Only one male specimen has been taken on Murray Island (Table 2) (Fig. 6) and it is uncertain whether the species is established there or is a vagrant. Since 1981, *E. a. monilifera* has been taken on Saibai (QDPI collection) and Campbell (De Baar collection) Islands and more recently in the Northern Territory (Fenner pers. comm.).

Euploea algea amycus Miskin

Wood (1987a) proposed the merging of Murray Island E. a. amycus with E. core corinna (W.S. Macleay). De Baar (in press) has refuted this argument and supports retention of separate taxa.

Figs 11-20 (following page). (11-14), Hypolimnas antilope, (11, 12 °, 13, 14 \mathfrak{P}), Murray Island (Qld); (15-16 \mathfrak{P}), Nacaduba sp. nr. mioswara, Murray Island (Qld), (15), recto, (16), verso; (17, 19 \mathfrak{P}), Danis cyanea manto, Murray Island (Qld), (17), recto, (19), verso; (18, 20 \mathfrak{P}), D. c. arinia, Innisfail (Qld), (18), recto, (20), verso. Forewing lengths - length of costal margin (mm): Figs 11, 12 (36), 13 (40), 14 (41), 15, 16 (9.5), 17, 19 (17), 18, 20 (19).























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Figs 21-26. (21 °), Graphium eurypylus lycaonides, Murray Island (Qld); (22 °), G. e. lycaon, Townsville (Qld); (23, 25 \Im), Catochrysops panormus papuana, Murray Island (Qld), (23), recto, (25), verso; (24, 26 \Im), C. p. platissa, (24), recto, Brisbane (Qld), (26), verso, Mackay (Qld). Forewing lengths (total length of costal margin, mm): Fig. 21 (43), 22 (42), 23, 25 (15), 24, 26 (14).

Table 2. Butterfly species recorded from Murray (Mer) Island

HESPERIIDAE Hasora chromus chromus (Cramer) 2.4.6Badamia exclamationis (Fabricius) 2.10.11 Notocrypta waigensis proserpina (Butler) 2,5,6,8 Ocybadistes ardea ardea Bethune-Baker 2,4,5,6,8,11,13 Ocybadistes walkeri sonia Waterhouse 10 Suniana sunias rectivitta (Mabille) 1,2,10,11 Telicota augius krefftii (W.J. Macleay) 1,2,4,5,6,8,10,11,12,13 Cephrenes trichopepla (Lower) 1,2,5,6,8,10,11 Borbo cinnara (Wallace) 1,2,6,8,10,13 Borbo impar tetragraphus Mabille 4,6,8,10,11 Pelopidas agna dingo Evans 2 Pelepidas lyelli lyelli Rothschild 2,5,6,8,11 PAPILIONIDAE Graphium sarpedon choredon (C. and R. Felder) 8.10 Graphium eurypylus lycaonides Rothschild 1,2,3,5,6,8,10,11 Graphium macfarlanei macfarlanei (Butler) 2,3,8,11 Graphium agamemnon ligatum (Rothschild) 8 Princeps aegeus ormenus (Guèrin-Mèneville) 1,2,3,4,5,6,8,11,13 Princeps fuscus indicatus (Butler) 1,2,6,9,10,11 Princeps ambrax ambrax (Boisduval) 2 Cressida cressida cressida Butler 2,3,6,8,10,11,12 Atrophaneura polydorus queenslandicus (Roths.) 1,2,3,5,6,8,10,11,13 Troides priamus poseidon (Doubleday) 1,6,8 PIERIDAE Catopsilia pomona pomona Fabricius 2,5,6,7,8,10,11,12,13 *Eurema hecabe phoebus* (Butler) 1,2,5,10,11,13 Elodina angulipennis (T.H. Lucas) 1 Cepora perimale latilimbata (Butler) 1,2,3,5,6,7,8,10,11,12,13 NYMPHALIDAE Danaus plexippus plexippus (Linnaeus) 6,8,11 Danaus chrysippus petilia (Stoll) 10 Tirumala hamata subnubila Talbot 1,2,3,5,6,8,9,10,11,12,13 Euploea batesii resarta Butler 1,2,3,4,5,6,7,8,10,11,13 *Euploea alcothoe monilifera* (Moore) 5 *Euploea core corinna* (W.S. Macleay) 2,6,8,10,11 Euploea algea amycus Miskin 2,3,5,6,7,8,9,10,11 Euploea sylvester sylvester (Fabricius) 10 *Euploea tulliolus tulliolus* (Fabricius) 2,3,4,5,6,7,8,9,10,11,12,13 Melanitis leda bankia (Fabricius) 1,2,3,5,6,8,10,11

Numbers are trip numbers from Table 1

Table 2 (cont.). Butterfly species recorded from Murray (Mer) Island

Numbers are trip numbers from Table 1

Mycalesis sirius sirius (Fabricius)	2,6,8,10,11
Mycalesis terminus terminus (Fabricius)	1,2,5,6,8,9,10,11
Mycalesis perseus perseus (Fabricius)	2,6,11
Orsotriaena medus moira Waterhouse and Lyell	2,6,8,10,11
Xois arctoa arctoa (Fabricius)	1,2,6,10
Taenaris artemis jamesi Butler	2,6,8,10,11,13
Doleschalia bisaltide australis C. and R. Felder	2,3,5,6,8,9,10,11,13
Hypolimnas bolina nerina (Fabricius)	2,5,6,8,9,10,11,12
Hypolimnas misippus (Linnaeus)	2,8,10,11
Hypolimnas alimena lamina Fruhstorfer	1,2,3,5,6,7,8,10,11,12
Hypolimas antilope (Cramer)	2,6,8,10,11
Yoma sabina parva (Butler)	1,2,3,5,6,8,10,11,12
Junonia villida calybe (Godart)	8,10,11,12
Junonia orithya albicincta Butler	2,8,11
Vagrans egista propinqua (Miskin)	4
Cupha prosope turneri (Butler)	1,4,5,6,8,9,10,11
Polyura sp.	10
LYCAENIDAE	
Arhopala micale amydon Waterhouse	1
Hypolycaena phorbas phorbas (Fabricius)	1
Deudorix epijarbas diovis Hewitson	6
Bindahara phocides yurgama Couchman	1
Petralaea dana (de Niceville)	6
Anthene seltuttus affinis (Waterhouse and Turner)	2
Candalides erinus erinus (Fabricius)	6
Nacaduba berenice berenice (Herrich-Schäffer)	1,10
Nacaduba sp. nr. mioswara Tite	6
Catopyrops ancyra mysia (Waterhouse and Lyell)	1,2,4,6,8,10,11
Prosotas nora auletes (Waterhouse and Lyell)	6,10,11
Danis cyanea manto Grose-Smith and Kirby	2,6,10,11
Danis schaeffera Eschscholtz	11
Jamides phaseli (Mathew) complex	2,4,5,6,8,10,11,12
Jamides amarauge Druce	2
Catochrysops amasea amasea Waterhouse and Lyell	1
Catochrysops panormus papuana Tite	1,2,4,5,6,8,10,11,13
Lampides boeticus (Linnaeus)	1,2,6,8,10,11,12
Syntarucus plinius pseudocassius (Murray)	6,10
Zizina labradus labdalon Waterhouse and Lyell	1,2,4,5,6,8,10,11,12,13
Zizeeria karsandra (Moore)	2,10
Famegana alsulus alsulus (Herrich-Schäffer)	2,5,6,8,11
Zizula hylax attenuata (T.P. Lucas)	11
Euchrysops cnejus cnidis Waterhouse and Lyell	1,2,5,8,11

Hypolimnas antilope (Cramer) (Figs 11-14)

H. antilope was recorded for the first time within Australian limits by Wood on Murray Island (1987a) and also from Yorke Island (1987b). More specimens have since been taken on Murray Island (Table 2) and the series of specimens that we collected (1986, 1989) indicate that the species is polymorphic. When observed in flight, some forms of *H. antilope* resemble in colour and pattern some forms of *Euploea batesii* resarta Butler, which fly in the same areas.

Cupha prosope turneri (Butler)

Cupha prosope prosope (Fabricius)

C. p. turneri is known from New Guinea and Darnley Island, Torres Strait (Common and Waterhouse 1981). Common and Waterhouse (1981) placed specimens from Murray Island into the subspecies C. p. prosope (Fabricius) whose distribution includes the rest of Torres Strait and coastal Queensland.

The long series of specimens that we collected from Murray Island indicates that the majority of specimens should be identified as C. p. *turneri*, some as C. p. prosope, and the rest as intermediates. As discussed above for C. perimale (Donovan), the situation deserves further study.

Polyura sp.

The identification of a *Polyura* sp. sighted by Johnson, 1989 (Table 1) remains in doubt. Torres Strait is at the junction of the distributions of two *Polyura* species, *P. jupiter jupiter* (Butler) occuring on mainland New Guinea and *P. sempronius sempronius* (Fabricius) being endemic to Australia (Smiles 1982). The most northern known locality of *P. s. sempronius* is Thursday Island (Smiles 1982).

LYCAENIDAE

Deudorix epijarbas diovis Hewitson

D. epijarbas diovis Hewitson occurs on the Australian mainland from Coen, Cape York Peninsula (Sands pers. comm.) to Gosford, New South Wales (Common and Waterhouse 1981) and is also known from New Guinea (Sands pers. comm.). One male specimen taken by M. De Baar (Table 2) (De Baar collection) is the first record from Torres Strait.

Nacaduba sp. nr mioswara Tite (Figs 15, 16)

A single female of an unidentified species of *Nacaduba* Moore was collected by M. De Baar (Table 2) (De Baar collection) and appears closest to *N. mioswara* Tite from Mioswar Island and New Hanover (D'Abrera 1971).

Danis cyanea manto Grose-Smith and Kirby (Figs 17-20)

Specimens of *D. cyanea* Cramer from Murray Island are distinct from *D. c. arinia* Oberthür from northern Queensland and we have identified them as *D. c. manto* which occurs in south-eastern New Guinea (D'Abrera 1971). Females from Murray Island (Figs 17, 19) have narrower white bands on the fore and hindwings, both above and beneath, than do *D. c. arinia* (Figs 18, 20) and have the submarginal blue markings heavily reduced on the hindwing above. Murray Island males are identical to those of *D. c. arinia* above, but differ by having narrower white bands beneath.

Danis schaeffera Eschscholtz (Figs 9, 10)

D. schaeffera ranges from Bachan and Ternate, through New Guinea to New Britain, the Solomons and New Caledonia (D'Abrera 1971) and is recorded for the first time within Australian limits from three females collected by us (Table 2). Our specimens match closely the race *D. s. caesius* Grose-Smith from the Hydrographer Mountains (New Guinea) illustrated in D'Abrera (1971).

Jamides phaseli complex

Much confusion surrounds the identification of *J. phaseli*-like butterflies from Murray and Darnley Islands (Johnson 1983, Wood 1987a). The long series of male and female specimens that we have seen from Murray Island (Beattie, De Baar, Knight, Lambkin collections) show a broad range of colour variation. It appears two species are involved and further study is needed to determine their status.

Catochrysops panormus papuana Tite (Figs 23-26)

The Murray Island population of C. panormus Felder has previously been placed in C. p. platissa Herrich-Schäffer which occurs across tropical Australia and down the east coast to Grafton, New South Wales (Common and Waterhouse 1981). D'Abrera (1971) illustrated the female of C. p. papuana and we consider that females from Murray Island are identical with it.

C. p. papuana females from Murray Island (Figs 23, 25) have a dark grey ground colour above, with more extensive shiny blue central areas and a series of bright, white submarginal arrow-shaped flecks on the hindwing. The markings beneath are brighter and more colourful than in C. p. platissa (Figs 24, 26). The males of C. p. papuana are more lilac in colour above, and have brighter markings beneath, than in C. p. platissa.

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References

ACKERY, P.R. and VANE-WRIGHT, R.I. 1984. *Milkweed Butterflies*. 425 pp. British Museum (Natural History), London.

COMMON, I.F.B. and WATERHOUSE, D.F. 1981. Butterflies of Australia. Pp. xiv + 682. Angus and Robertson, Sydney.

D'ABRERA, B. 1971. Butterflies of the Australian Region. 415 pp. Lansdowne Press, Melbourne.

De BAAR, M. 1988. Insects collected during a trip to Torres Strait, 27 March to 10 April 1987. News Bulletin of the Entomological Society of Queensland 15: 107-117.

De BAAR, M. (in press). E. core corinna (Macleay) and E. algea amycus (Miskin) (Lepidoptera: Nymphalidae) form hybrids within Torres Strait, Queensland. Australian Entomological Magazine 18: (in press).

EVANS, W.H. 1949. A catalogue of the Hesperiidae from Europe, Asia and Australia in the British Museum (Natural History). Pp. xix + 502. British Museum (Natural History), London.

HANCOCK, D.L. 1983. Classification of the Papilionidae (Lepidoptera): a phylogenetic approach. *Smithersia* **2**: 1-48.

HAUGUM, J. and LOW, A.M. 1979. A Monograph of the Birdwing Butterflies. Vol. 1, part 2, pp. 85-192. Scandinavian Science Press Ltd, Klampenborg, Denmark.

JOHNSON, S.J. 1983. A brief look at the butterflies of Darnley Island. News Bulletin of the Entomological Society of Queensland 11: 117-119.

MOULDS, M.S. 1977. Bibliography of the Australian butterflies. 239 pp. Australian Entomological Press, Greenwich.

SMILES, R.L. 1982. The taxonomy and phylogeny of the genus Polyura Billberg (Lepidoptera: Nymphalidae). Bulletin of the British Museum (Natural History) (Entomology Series) 44: 115-237.

WATERHOUSE, G.A. and LYELL, G. 1914. The butterflies of Australia. Pp. vi + 239. Angus and Robertson, Sydney.

WOOD, G.A. 1987a. The butterflies of Murray Island, Torres Strait, Queensland. Australian Entomological Magazine 14: 39-42.

WOOD, G.A. 1987b. New and interesting butterfly records from northern Queensland and Torres Strait. Australian Entomological Magazine 14: 71-72.